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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gerald C. DiPiazza

Tyco.005

6347

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Tyco Technology Resources
Suite 140
4550 New Linden Hill Road
Wilmington, DE 19808-2952

EXAMINER

STEPHEN, EMEM O

ART UNIT

PAPER NUMBER

2617

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DELIVERY MODE

11/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/849,579	DIPIAZZA, GERALD C.	
	Examiner	Art Unit	
	EMEM STEPHEN	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 1, 8-18, 20-26, and 28 is/are rejected.
- 7) ☐ Claim(s) 2-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim indicates the third communication module configured to receive the first type of communication signal, however, in previous claim; the third communication module received a second type of communication signal. The Examiner suggests "the third communication module configured to receive a first communication signal."

Response to Arguments

3. Applicant's arguments filed 09/17/2007 have been fully considered but they are not persuasive.

Applicant's argument that Dunne fails to disclose transmitting the second type of communication signal inside the building to the third communication module at a power level based on signal-to-interference level is not persuasive for the reason that Dunne discloses transmitting at a predetermined power level sufficient to distinguish it from background noise, and setting the predetermine power threshold level based on background noise level (col. 7 line 65-col. 8 line3), therefore, Dunne discloses applicant's limitation stated above.

background noise level (col. 7 line 65-col. 8 line3), therefore, Dunne discloses applicant's limitation stated above.

Applicant's further argument with regards to claim 23 is not persuasive for the reason that the applicant claims an apparatus mounted on the side of the building that receives a radio signal from a different elevation and transmits it into the building, Ami discloses millimeter wave transmitter 22, 22 A-B and receiver 23A-C, that are mountable to the side of the building as shown in fig. 2, for television broadcasting reception (par. 19-20, received signals originating from CS and BS). Ami further discloses receive section 23 inside the building that receive the broadcast signal and further transmits it (par. 20), therefore, Ami discloses Applicant's limitation above, furthermore, it is well known in the art in TV broadcasting to have TV antennas, and receivers mounted on the side of the building for broadcast reception and transmission, therefore, it cannot be a novel feature.

Applicant's argued limitation states a signal encoded with an indication of the elevation from which it is transmitted. The Examiner understands elevation as referring to a position of a communication module in a building, therefore, the encoded signal indicates the position of the communication module in the building. Carter discloses received ID signal that includes information relating to current location of a transceiver device (par. 10). The applicant's further argument that Trent indicates the ground location of the transmitter, and not the elevation is not persuasive, since the elevation as already stated above refers to position; therefore, Trent discloses applicant's

limitation above. Therefore the argued limitations are the same as disclosed by the reference, rejections are maintained as repeated below.

Allowable Subject Matter

4. Claims 2-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claim 19 is allowed.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claims 1, 15-18, and 20-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Publication No. 2003/0211827 A1 to Yonezawa et al. (Yonezawa) in view of U. S. Patent No. 6,745,036 B1 to Dunne et al., and further in view of U. S. Patent No. 6,895,218 B2 to Yarkosky.

Regarding claim 1, Yonezawa discloses a communication system, comprising: a first communication module adapted to: receive a first type of communication signal, convert the first type of communication signal to a second type of communication signal (pars. 16, and 33, base station-directed unit) and transmit the second type of communication signal to a second communication module (pars. 17, and 33, mobile station-directed unit); the second communication module disposed on a building and adapted to receive the second type of communication signal from the first communication module, and transmit the second type of communication signal inside the building to a third communication module (see figure 3, pars. 2-4, 17 and 36, a mobile station-directed unit provided at the center of the ceiling); and the third communication module located inside the building and adapted to receive the second type of communication signal (see figure 2, and par. 35, a plurality of mobile station-directed units in a plurality of rooms, walls or floors).

However, Yonezawa fails to disclose transmit the second type of communication signal inside the building to a third communication module at a power level based on a signal-to-interference level.

In a similar endeavor, Dunne discloses transmit the second type of communication signal inside the building to a third communication module at a power

level based on a signal-to-interference level (col. 5 lines 29-65, col. 7 lines 65-67, and col. 11 lines 15-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Yonezawa, and have the second type of communication signal transmitted inside the building to a third communication module at a power level based on a signal-to-interference level as disclosed by Dunne for the purpose of transmitting a good signal.

However, Dunne fails to disclose third communication module converting the second type of communication signal into the first type of communication signal, and transmit the first type of communication signal.

Yarkosky discloses third communication module converting the second type of communication signal into the first type of communication signal, and transmit the first type of communication signal (see figure 8, col. 8 lines 1-39, mobile station interface port 366 converts the intermediate downlink signal (second type of communication signal) it receives 364 into the downlink frequency (first type of communication signal), the downlink signal (first type of communication signal) was previously converted into an intermediate downlink signal (second type of communication signal), by the propagation relay 352.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Dunne, and have the third communication module convert the second type of communication signal into the first type of communication signal, and transmit the first type of communication signal as

disclosed by Yarkosky for the purpose of more repeaters in transmission of a first type of communication signal to increase the propagation distance.

Regarding claims 16, 20, and 21, the combination of Yonezawa, Dunne, and Yarkosky discloses the system of claim 1 wherein the first type of communication signal is carried over at least one of: an approximately 400 MHz frequency band; an approximately 800 MHz frequency band; an approximately 900 MHz band; an approximately 1800 MHz band; and an approximately 2 GHz frequency band; wherein the first communication module is mounted to an elevated structure; wherein the first communication signal is adapted to up-convert the first type of signal to the second type of signal; wherein the first communication signal is adapted to down-convert the first type of signal to the second type of signal. (Yarkosky, see figure 1, col. 3 lines 29-46, and col. 6 lines 42-48).

Regarding claims 15, 17, 18, and 22, the combination of Yonezawa, Dunne, and Yarkosky discloses the system of claim 1, wherein the second type of communication signal is mounted inside a window of the building (Yonezawa, see figure 2 and par. 35, radio repeating signals capable of passing through walls, floors and so forth, plurality of mobile station-directed units are used in plurality of rooms floors including windows); wherein the first communication module is mounted to a structure at ground level; wherein the first communication module comprises an antenna, wherein the antenna is a high gain fan beam antenna; wherein the system

is configured for floor-to-floor communication; and wherein the second communication module is on the top of the building (Yonezawa, see figures 2, 3, 5, pars. 9, and 35) .

9. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Dunne, and further in view of Yarkosky, and further in view of U. S. Publication No. 2004/0137842 A1 to Iwata et al. (Iwata).

Regarding claim 12, the combination of Yonezawa, Dunne, and Yarkosky discloses the system of claim 1, however, the combination fails to disclose wherein: the third communication module comprises communication processing circuitry that is configured to validate the second type of communication signal; and the third communication module only transmits the type of communication signal if the second type of communication signal is validated by the communication processing circuitry; the first communication module comprises communication processing circuitry that is configured to validate the first type of communication signal; and the first communication module only transmits the second type of communication signal if the first type of communication signal is validated by the communication processing circuitry.

Iwata discloses the first communication module comprises communication processing circuitry that is configured to validate the third and first type of communication signal; and the first communication module only transmits the second type of communication signal if the first type of communication signal is validated by the

communication processing circuitry (par. 58, terminal information transmitting unit 106 adds authentication data and data which allows a data source to be identified for each terminal device to transmission data).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have the third and first communication module comprises communication processing circuitry that is configured to validate the first type of communication signal; and the first communication module only transmits the second type of communication signal if the first type of communication signal is validated by the communication processing circuitry as taught by Iwata for the purpose of authentication data

10. **Claims 8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Dunne, and further in view of Yarkosky as applied to claim 1 above, and further in view of U. S. Publication No. 2002/0177401 to Judd et al. (Judd).

Regarding claims 8 and 9, the combination of Yonezawa, Carter, and Yarkosky discloses the system of claim 1, however the combination fails to specifically disclose wherein the second communication module is mounted outside a window of the building; wherein the second communication module is mounted inside a window of the building. Judd discloses wherein the second communication module is mounted outside and inside a window of the building (see figure 5, and pars. 36-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have the second communication

module is mounted outside and inside a window of the building for the purpose of enhancing propagation of communication.

11. **Claims 10, 11, and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Dunne, and further in view of Yarkosky and further in view of U. S. Publication No. 20010031623 A1 to Masoian.

Regarding claims 10 and 11, the combination of Yonezawa, Dunne, and Yarkosky discloses the system of claim 1, wherein the array antennas comprise interconnected beam-forming array patterns on both the outward and the inward facing sides, separated by an intervening ground plane (Yarkosky, see figure 1).

However, the combination fails to disclose the second communication module comprises at least one antenna that is a low to moderate gain array antenna.

Masoian discloses low to moderate gain array antennas (par. 0022). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have the second communication module comprises at least one antenna that is a low to moderate gain array antenna, wherein the low to moderate gain array antennas comprise interconnected beam-forming array patterns on both the outward and the inward facing sides, separated by an intervening ground plane for the purpose of array patterns being sent towards a certain direction.

Regarding claim 14, the combination of Yonezawa, Dunne, and Yarkosky discloses the system of claim 1, however, the combination fails to disclose wherein the

first communication module is mounted on top of a vehicle. Masoian discloses wherein the first communication module is mounted on top of a vehicle (see figure 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have the first communication module is mounted on top of a vehicle as shown by Masoian for the purpose of emergency notification.

12. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Dunne, and further in view of Yarkosky, and further in view of Iwata, and further in view of U. S. Patent No. 3,876,980 to Haemmlg et al. (Haemmlg).

Regarding claim 13, the combination of Yonezawa, Carter, Yarkosky, and Iwata discloses the system of claim 12, however, the combination fails to disclose wherein the communication processing circuitry validates the first type of communication signal if the first type of communication signal is an emergency telephone called placed or received by emergency personnel.

Haemmlg disclose wherein the communication processing circuitry validates the first type of communication signal if the first type of communication signal is an emergency telephone called placed or received by emergency personnel (col. 3 lines 35-65, the precoded message provided by the portable transmitter is verified by the emergency signal verify).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have the communication

processing circuitry validates the first type of communication signal if the first type of communication signal is an emergency telephone call placed or received by emergency personnel as taught by Haemmlg for the purpose of verifying the validity of received emergency message.

13. **Claim 23** is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Publication No. 2004056457 A to Ami et.al. in view of Yarkosky.

Regarding claim 23, Ami discloses an apparatus comprising a communication module (millimeter wave transmitter 22 and receiver 23A-C) mountable to the side of a building and the communication module is configured to: receive a radio signal (see fig. 3, and par. 21) from another communication module located on the side of the building, the radio signal originating from an elevation different than the communication module; (see figure 1, and pars. 21, signals originating from antenna 31-33) and propagated at least one substantially downward along an outside surface of the building (signal transmitted from millimeter wave transmitter 22 to receiver 23 are transmitted substantially downward along an outside surface of the building); and transmit the radio signal into the building (see fig. 1, receiver 23 transmit signal into building to be received by receiver set 42-43).

However, Ami fails to disclose transmit the radio signal substantially upward along an outside of the building.

Yarkosky discloses transmit the radio signal substantially upward along an outside of the building (see figures 1, 5, and col. 3 lines 55-58, uplink signal 22 is transmitted substantially downward along an outside of the building).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Ami, and have the radio signal such that the radio waves communicating the radio signal propagate at least one of substantially upward along an outside of the building as disclosed by Yarkosky for the purpose of transmitting it through to the communication modules.

14. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ami in view of Yarkosky, and further in view of Takatori.

Regarding claim 24, the combination of Ami and Yarkosky discloses the apparatus and method of claim 23, wherein the radio signal carries at least one of an up-converted mobile communication signal, an up-converted and a down-converted legacy wireless communication signal (Yarkosky col. 6 lines 42-48, down convert and up convert downlink signal). However, the combination fails to disclose a millimeter wave radio signal. However, the combination fails to disclose wherein the radio signal carries at least one of an up-converted mobile communication signal, an up-converted and an down-converted legacy wireless communication signal.

Takatori discloses a millimeter wave radio signal (col. 2 lines 54-62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have a millimeter wave radio signal

as taught by Takatori for the purpose of increasing transfer speed of wireless communication (col. 2 lines 1-14).

15. **Claim 25 is** rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Publication No. 2004/0176027 A1 to O'Neill in view of Carter.

Regarding claim 25, O'Neill discloses a method comprising: receiving a radio signal at a communication module, wherein the communication module is mounted to the side of a building (see figure 1, and par. 45, repeater system 20 located near the window receives signals from base station), wherein the radio signal originated from an elevation different than the communication module; and transmitting the radio signal into the building (see figure 1, and pars. 45-47, signals that are received from base station by repeater system 20 are transmitted to subscriber unit inside the building).

However, O'Neill fails to disclose the signal is encoded with an indication of the elevation from which the signal was transmitted.

Carter discloses the signal encoded with an indication of the elevation from which the signal was transmitted (pars. 2, 4-6, and 48-49). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of O'Neill, and have the signal encoded with an indication of the elevation from which the signal was transmitted as disclosed by Carter for the purpose of using transmitted signal in determining the location of a person in the building.

16. **Claim 25** is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Publication No. 2004/0176027 A1 to O'Neill in view of U S Patent No. 3,665,313 to Trent.

Regarding claim 25, O'Neill discloses a method comprising: receiving a radio signal at a communication module, wherein the communication module is mounted to the side of a building (see figure 1, and par. 45, repeater system 20 located near the window receives signals from base station), wherein the radio signal originated from an elevation different than the communication module; and transmitting the radio signal into the building (see figure 1, and pars. 45-47, signals that are received from base station by repeater system 20 are transmitted to subscriber unit inside the building).

However, O'Neill fails to disclose the signal is encoded with an indication of the elevation from which the signal was transmitted.

Trent discloses the signal encoded with an indication of the elevation from which the signal was transmitted (col. 2 lines 25-31, and col. 4 lines 1-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of O'Neill, and have the signal encoded with an indication of the elevation from which the signal was transmitted as disclosed by Trent for the purpose of using transmitted signal in determining the location of a person in the building.

17. **Claims 26, and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neill in view of Carter, and further in view of Yarkosky, and further in view of Takatori.

Regarding claims 26, and 28, the combination of O'Neill and Carter discloses the apparatus and method of claim 25, wherein the signal includes an indication of a floor of the building from which the signal was transmitted (see figure 5 and par. 49), however, the combination fails to disclose wherein the radio signal carries at least one of an up-converted mobile communication signal, an up-converted and an down-converted legacy wireless communication signal.

In a similar endeavor, Yarkosky discloses wherein the radio signal carries at least one of an up-converted mobile communication signal, an up-converted and a down-converted legacy wireless communication signal (col. 6 lines 42-48, down convert and up convert downlink signal). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have the radio signal carries at least one of an up-converted mobile communication signal, an up-converted and an down-converted legacy wireless communication signal as taught by Yarkosky for the purpose of transmission through a building. However, Yarkosky fails to disclose a millimeter wave radio signal.

Takatori discloses a millimeter wave radio signal (col. 2 lines 54-62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination, and have a millimeter wave radio signal as taught by Takatori for the purpose of increasing transfer speed of wireless communication.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMEM STEPHEN whose telephone number is 571 272 8129. The examiner can normally be reached on 8-5 Mon-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571 272 7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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11/16/07


LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER